

### CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A method of enhancing audio quality in a reproduction medium having unknown characteristics, said method comprising:
  - a. generating a predetermined finite set of M single frequency tones;
  - b. passing said set of tones through said reproduction medium to generate a subsequent output signal;
  - c. passing said subsequent output signal through a set of sub-band filters, each of the said sub-band filters passing at least a frequency corresponding to one of the said M tones;
  - d. estimating said unknown characteristics of said reproduction medium by examining outputs of each of said sub-band filters after passing said subsequent output signal through said medium; and
  - e. constructing a set of sub-band inverse filters to compensate for the said estimated characteristics of the said reproduction medium;
  - f. before passing said audio signal through said reproduction medium, passing said audio signal through said inverse filters, thereby improving the audio quality after the audio signal passes through said reproduction medium.